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Faculty of Dentistry
Examinations

1955

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UNIVERSITY OF TORONTO
FACULTY OF DENTISTRY

ANNUAL EXAMINATIONS, 1955

FIRST YEAR PREDENTAL

ANTHROPOLOGY

Examiner—J. N. EMERSON

Answer all FOUR questions. All are of equal value.

1. It has been said there is no new thing under the sun; that life is a great unfolding. Discuss the idea with reference to Du Nouy's and Simpson's ideas of man's place in nature as a new and unique thing.
2. Indicate how early men may be distinguished from ape forms. Illustrate with reference to specific fossil men known to you.
3. Outline and discuss Sheldon's somatotypes.
4. Discuss man's relationship to nature in such societies as the Plains Indians, the Naskapi, and the Northwest Coast.



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Art and Archaeology

UNIVERSITY OF TORONTO
Faculty of Arts

Annual Examinations, 1955

FIRST YEAR

ART AND ARCHAEOLOGY 1a, 1b
The Art of the Ancient World

Examiners - J. W. Graham
F. E. Winter

Five questions constitute a full paper. Candidates must answer Question 1 and any four others. 1a students must answer one question from Part B as one of their four.

Part A

1. Identify and date the monuments shown on the screen. Carefully tabulate your answers from 1 to 10 in the order of the slides, including any not identified.
2. On what features does the Parthenon's reputation for beauty rest?
3. (a) Discuss briefly the different types of open-air auditoriums used by the Greeks and Romans, mentioning specific and typical examples.
(b) Date and describe in some detail the Coliseum.
4. Date and describe the sculpture of three of the following monuments, showing how each is characteristic of the age which produced it:
 - (a) The Pergamum frieze (of the Great Altar)
 - (b) The Ara Pacis or Altar of Augustan Peace
 - (c) The Column of Trajan
 - (d) The Temple at Aegina
5. Write on the sculptures of the Parthenon: date, location, sculptor(s), composition, style, subject-matter, etc.
6. Date and describe three of the following, showing how they illustrate the development of Greek sculpture:
 - (a) The Metropolitan Kouros or the Sounion Kouros
 - (b) The Doryphorus of Polyclitus
 - (c) The statue of Maussollus from the Mausoleum
 - (d) The Nike of Paeonius.

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Part B.

7. When and how did the following developments take place? Where possible, name artists and/or works associated with or illustrating these changes. Write on three.
- (a) Black-figure to red-figure pottery styles
 - (b) Conceptual to visual drawing
 - (c) Perspective
 - (d) True painting, as distinguished from coloured drawing.
8. Write on the Beehive or Tholos Tombs of Mycenae.
9. Write briefly on three of the following:
- (a) The Villa of Good Fortune at Olynthus
 - (b) The Council-House (Bouleuterion) at Miletos
 - (c) Mosaic pavements at Olynthus and Delos
 - (d) The Agora at Priene as an example of later Greek town-planning.

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UNIVERSITY OF TORONTO
FACULTY OF DENTISTRY

FACULTY OF PHARMACY

ANNUAL EXAMINATIONS, 1955

FIRST YEAR

ENGLISH COMPOSITION

Examiners—THE STAFF IN ENGLISH

Candidates will write an essay of approximately 1,000 words on ONE of the following subjects. In addition to being well-written (punctuation, spelling, diction, sentence structure, paragraph structure), the essay should constitute a sound, logically developed argument.

1. The central theme in *A Passage to India*.
2. The central theme in *Tess of the D'Urbervilles*.
3. The central theme in *Joseph Andrews*.

English Literature.

UNIVERSITY OF TORONTO
FACULTY OF DENTISTRY
FACULTY OF PHARMACY

ANNUAL EXAMINATIONS, 1955

FIRST YEAR

ENGLISH LITERATURE

Examiners—THE STAFF IN ENGLISH

Answer FIVE questions: the two questions in PART A and ONE question from each of PARTS B, C, and D. Do not answer two questions dealing with the same text; for example, if you are writing on King Lear in PART A do not answer on King Lear in PART B.

Each Part is worth 25 marks. Question 1 is valued at 10 marks, Question 2 at 15 marks.

PART A

1. Explain briefly [one paragraph] why an understanding of *one* of the following characters is important for an understanding of the novel in which he or she appears:

(a) Joan Durbeyfield, (b) Pamela Booby, (c) Ronnie Heaslop.

2. Explain briefly [one or two paragraphs] how *one* of the following statements contributes to an understanding of the play from which it is drawn:

(a) Thou, nature, art my goddess; to thy law
My services are bound.

(b) I'll say, a strange man is a marvel, with his mighty
talk; but what's a squabble in your backyard, and
the blow of a loy, have taught me there's a great
gap between a gallous story and a dirty deed.

(c) Promise was that I
Should Israel from Philistian yoke deliver;
Ask for this great Deliverer now, and find him
Eyeless in Gaza at the Mill with slaves,
Himself in bonds under Philistian yoke.

(d) Woe unto me when all men praise me! I bid you
remember that I am a saint, and that saints can
work miracles. And now tell me: shall I rise
from the dead, and come back to you a living woman?

PART B

3. "The strange fact is that those who love Lear most are, at different times throughout the play, the direct cause of his greatest agonies." Discuss.

4. "The Chorus, rather than Samson, is the most important character in *Samson Agonistes*." Discuss.

5. By referring to certain of the characters who individually might appear to be the villain of the piece, explain what Shaw meant by his statement that "there are no villains in *St. Joan*."

6. Assess the respective claims of Alec, Angel, and the President of the Immortals to be considered the villain of Hardy's novel.

7. "The comic artist exposes folly and vice." What are the vices exposed by Fielding in *Joseph Andrews*? Show that you can distinguish between a folly and a vice by citing an instance in *Joseph Andrews* where Fielding exposes folly.

8. Discuss the use of symbolism in *A Passage to India*.

PART C

9. "The Love Song of J. Alfred Prufrock" begins

"Let us go then, you and I"

and ends

"We have lingered in the chambers of the sea

By sea-girls wreathed with seaweed red and brown

Till human voices wake us, and we drown."

Discuss the identity of the *I*, the *you*, and the *we* of the poem.

10. On the evidence presented by either "Tintern Abbey" or the sonnets, how accurate is it to say that Wordsworth practises in his poetry what he preaches in his Preface to *Lyrical Ballads*?

11. Which of Browning's poems have you found most impressive? Which have you found relatively unimpressive? Give reasons for your choices.

PART D

12. Disregarding similarities of prose style, explain why there can be no doubt that "The Function of Criticism at the Present Time" and "Sweetness and Light" were written by the same author.

13. To what extent are the first three books of *Gulliver's Travels* a necessary preparation for the final book?

14. "Butler, Newman, and Mill each had an important message to bear to their contemporaries. They have little of importance to say to the mid-twentieth-century Canadian." Discuss this statement in the light of your reading of *one* of the authors cited.

UNIVERSITY OF TORONTO

FACULTY OF ARTS

ANNUAL EXAMINATIONS, 1955

FIRST YEAR

FRENCH 1a

(Write PARTS A and B in separate books.)

PART A

(Write in a separate book.)

1. Translate into French: (Write on alternate lines.)

All the interesting events of the story we have just read take place in Alsace. Mr. Philippe and his daughter-in-law have remained faithful to France and have resisted the efforts of their conquerors to Germanize the old French province. After his return from Germany John refused to become either a magistrate or an official of the government. His father did not want him to meddle in politics although he himself was interested in public life.

"How glad I am that you are home again," he said.

At this moment Odile entered the drawing-room. She smiled at John and he could read in her eyes that she was happy to see him. The old grandmother was sitting near the fireplace, busy sewing. John brought some wine and glasses. A few moments later he said in a loud voice:

"Let's drink to Alsace."

Odile knew what John was thinking about. She could not forget the day she had first met him. She had hoped her mother would let them get married. It was ten o'clock in the evening when he left the house. Shortly afterwards he met Lucienne and Farnow. Without smiling, he asked politely:

"Why don't you introduce him to me?"

2. Translate into English:

Ma mère souffrait beaucoup de la gêne où nous vivions, et elle trouvait souvent des paroles aigres pour son mari, des reproches voilés et perfides. Le pauvre homme avait alors un geste qui me navrait. Il se passait la main ouverte sur le front, comme pour essuyer une sueur qui n'existait pas, et il ne répondait rien. Je sentais sa douleur impuissante. On économisait sur tout; on n'acceptait jamais un dîner, pour n'avoir pas à le rendre; on achetait les provisions au rabais, les fonds de boutique. Mes soeurs faisaient leurs robes elles-mêmes et avaient de longues discussions sur le prix d'un ruban qui valait quinze centimes le mètre. Notre nourriture ordinaire consistait en soupe grasse et boeuf accommodé à toutes les sauces. Cela est sain et réconfortant, paraît-il; j'aurais préféré autre chose.

1. Pippo travaillait lentement et secouait la tête de temps en temps; il fronça tout à coup le sourcil, et passa brusquement sur sa toile le linge qui servait à essuyer ses pinceaux. Béatrice courut à lui aussitôt, et elle vit qu'il avait effacé la bouche et les yeux. Elle en fut tellement consternée, qu'elle ne put retenir ses larmes; mais Pippo remit tranquillement ses couleurs dans sa boîte:—Le regard et le sourire, dit-il, sont deux choses difficiles à rendre; il faut être inspiré pour oser les peindre. Je ne me sens pas la main assez sûre, et je ne sais même pas si je l'aurai jamais.

Le portrait resta donc ainsi défiguré, et toutes les fois que Béatrice regardait cette tête sans bouche et sans yeux, elle sentait redoubler son inquiétude.

(a) Translate the above passage.

(b) "... il faut être inspiré ..." What episode finally furnishes the hero with the necessary inspiration?

(c) "... inquiétude ..." because of what?

(d) What later events justify this feeling of the heroine?

2. Mérimée's apparent indifference to his characters. How does he convey this in *La partie de trictrac*?

OR

How does Balzac build up suspense in *Un épisode sous la terreur*.

3. (a) Translate the following passage:

Charles était un homme trop à la mode, il avait été trop constamment heureux par ses parents, trop adulé par le monde pour avoir de grands sentiments. Le grain d'or que sa mère lui avait jeté au coeur s'était étendu dans la filière parisienne, il l'avait employé en superficie et devait l'user par le frottement. Charles n'avait jamais eu l'occasion d'appliquer les maximes de la morale parisienne, et jusqu'à ce jour il était beau d'inexpérience. Mais, à son insu, l'égoïsme lui avait été inoculé. Les germes de l'économie politique à l'usage du Parisien, latents en son coeur, ne devaient pas tarder à y fleurir, aussitôt que de spectateur oisif il deviendrait acteur dans le drame de la vie réelle.

(b) "Aussi la mort de cet homme ne contrasta-t-elle point avec sa vie". Tell in your own words the story of Grandet's death, and explain fully what Balzac means by this quotation.

4. Discuss *La mort du loup* with respect to theme, subject-matter, ideas. How does this poem fit in with the author's general philosophy of life?

General Chemistry

Chemistry 306

UNIVERSITY OF TORONTO
FACULTY OF DENTISTRY

ANNUAL EXAMINATIONS, JANUARY, 1955

CHEMISTRY 306

PREDENTAL YEAR
GENERAL CHEMISTRY

Examiner—J. J. RAE

1. (a) Define a solution. Give an example of each of the following:
- (i) an aqueous solution of an element,
 - (ii) a solid solution,
 - (iii) a solution supersaturated with a gas,
 - (iv) a coloured solution that does not obey the Beer-Lambert Law.

(b) The solubility of cadmium sulphide (CdS) is 0.013 mg. per 100 ml. at 18° . Calculate the mg. of CdS dissolved in one litre of a solution containing 0.01 M Na_2S . ($\text{Cd} = 112$, $\text{S} = 32$).

2. (a) Define, give an example and explain the existence of isotopes.

(b) State Graham's Law of gaseous diffusion and show how it can be used to calculate the molecular weight of a gas.

(c) State and explain the periodic law by means of modern atomic theory.

3. (a) Calculate the relative humidity in a room from the following data:

Size of room $3 \times 3 \times 5$ m.

Temperature 25° , Pressure 742 mm.

Vapour pressure of water at 25° is 24 mm.

Weight of water in 5 l. of room air 0.043 g.

(b) Why does a high relative humidity when the outside temperature is in the eighties (Fahrenheit) make the heat oppressive, whereas a high relative humidity when the outside temperature is near zero (Fahrenheit) makes the cold seem more penetrating?

4. (a) Write descriptive paragraphs on *any two* of the following:
- (i) commercial acids,
 - (ii) important sodium salts,
 - (iii) water purification and softening,
 - (iv) alloys.

(b) Give the name and formula for an example of each of the following:

- (i) radioactive isotope,
- (ii) acid salt,
- (iii) covalent compound,
- (iv) complex ion.

5. Distinguish clearly between the following pairs of terms:

- (i) reacting weight and atomic weight,
- (ii) vapour pressure and partial vapour pressure,
- (iii) electrolysis and ionization,
- (iv) a law and a theory.

6. (a) Calculate the pH of a lactic acid solution containing 5 g. of lactic acid in 200 ml. of solution.

K_{ion} for lactic acid is 1.4×10^{-4} .

The formula for lactic acid is $\text{C}_3\text{H}_6\text{O}_3$ and it is monobasic.

(b) Calculate the volume of a concentrated aqueous solution of lactic acid (85% lactic acid by weight; specific gravity 1.2) that would be needed to make 500 ml. of 1 M lactic acid solution.

7. Explain any *three* of the following:

- (i) buffer action,
- (ii) the freezing point (cryoscopic) method for determining molecular weights,
- (iii) the action of an electric cell,
- (iv) the colorimetric determination of pH.

8. Define the following processes and give examples of each:

- (i) dialysis,
- (ii) fractional crystallization,
- (iii) transmutation,
- (iv) redox reaction.

Mathematics

UNIVERSITY OF TORONTO
FACULTY OF DENTISTRY

ANNUAL EXAMINATIONS, 1955

PREDENTAL YEAR
MATHEMATICS

Examiner—I. GUTTMAN

Candidates are to do PART A, and THREE questions from PART B

PART A

1. (a) If $u = u(x)$ and $v = v(x)$, find from first principles dy/dx , where $y = u/v$.

(b) Differentiate

$$(i) \ y = \frac{x^2 - 4}{x^2 + 4}; \quad (ii) \ y = \tan^{-1} \frac{1 + x}{1 - x};$$

$$(iii) \ y = \log \left[\sin \left(\frac{\pi}{2} - \cos^{-1} \sqrt{x^2 + 4x + 4} \right) \right];$$

$$(iv) \ y = (x + 1) \sqrt{x^2 - 1}.$$

(c) Show that $dy/dx = (x + y)/(x - y)$,

given that $\tan^{-1} \frac{x}{y} + \log \sqrt{x^2 + y^2} = 0$.

2. (a) Define the definite integral of the function $f(x)$, between the lower and upper limits $x = a$ and $x = b$. Illustrate with a clearly drawn figure. Quote the theorem that relates the problem of definite integration to indefinite integration.

(b) Integrate

$$(i) \ \int \frac{dx}{9x^2 + 12x + 8};$$

$$(ii) \ \int \frac{dx}{9x + 4};$$

$$(iii) \ \int \frac{dx}{x \log x};$$

$$(iv) \ \int \frac{dx}{\sqrt{9 - 4x^2}};$$

$$(v) \ \int x \sec(x^2 - 1) dx$$

$$(vi) \ \int e^x \sin x dx$$

OR

3. (a) Show that the Maclaurin Series Expansion of

$$\sin x = x - \frac{x^3}{3!} + \frac{x^5}{5!} - \frac{x^7}{7!} + \dots$$

(b) (i) Show $\log \left(\frac{n+1}{n-1} \right) = 2 \left(\frac{1}{n} + \frac{1}{3n^3} + \frac{1}{5n^5} + \frac{1}{7n^7} + \dots \right)$

(Hint: Find Maclaurin Series Expansion of $\log(1+x)$, and let $x = \pm 1/n$).

Use (i) to find (ii) $\log_e 7$

(iii) $\log_{10} 7$, to two decimal places,

given $\log_e 3 = 1.099$

$\log_e 10 = 2.303$

PART B

4. At any height the rate of change of pressure in the earth's atmosphere with respect to height is proportional to the pressure at the height. If the pressure at sea level is 15 lbs. per sq. in., and at 1 mile above sea level is 12 lb. per sq. in., find a formula for the pressure at any height, given that

$$\log .8 = -.2231.$$

5. A circle of radius 20 ins. is divided into two parts by a chord at a distance of seven inches from the centre. Find the dimensions of the rectangle of maximum area which can be inscribed in the smaller of these parts.

6. A parcel post package is in the form of a rectangular box with a square cross section. If the combined length and girth is 60 ins., find:

(a) the dimensions of the box so that its volume is a maximum, and

(b) test the answer of (a) by using

(i) the first derivative test;

(ii) the second derivative test.

7. The figure bounded by the curve $y = \frac{1}{4}x^3$, the x axis and the line $x = 2$ is revolved about the y -axis. Find the volume of the resulting solid of revolution.

8. Find the area bounded by the parabola $x^2 = 8y$ and the line $x - 2y + 8 = 0$.

9. The cross section of a trough 12 feet long is an isosceles triangle 3 feet across the top and 2 feet deep. Water flows into the trough at the rate of three cu. ft. per minute. How fast is the surface rising when the water is one foot deep?

Organic Chemistry

UNIVERSITY OF TORONTO
FACULTY OF DENTISTRY

ANNUAL EXAMINATIONS, 1955

PREDENTAL YEAR

CHEMISTRY 216

ORGANIC CHEMISTRY

Examiner—J. J. RAE

1. (a) Give four reasons why chemists subdivide chemistry into organic and inorganic chemistry.

(b) Write a descriptive note on the subject of optical isomerism.

2. Unlabelled samples of pure 2-hexene, 2-hexyne, benzene and cyclohexane are provided. What reactions and tests could be used to identify each?

3. Write a structural formula, give an alternative name and state a specific use for *each* of the following:

- | | |
|----------------|-----------------------|
| (i) novocaine, | (v) saccharin, |
| (ii) alanine, | (vi) caffeine, |
| (iii) thymol, | (vii) pyruvic acid, |
| (iv) indigo, | (viii) methyl orange. |

4. (a) Discuss the chemical reactions of alcohols.

(b) Write equations that could be used to prepare the following:

- (i) resorcinol,
- (ii) butyramide,
- (iii) o-xylene.

5. (a) Define the following terms. Give examples.

- (i) method of superposition,
- (ii) secondary carbon,
- (iii) ortho-directing group.

(b) Write formulas for the following radicals benzyl and benzoyl, amino and imino, and give names for compounds, one for each, containing them.

6. Write descriptive paragraphs on *any two* of the following topics:

- (i) hypnotics and sedatives,
- (ii) heterocyclic compounds,
- (iii) plastics.

7. (a) Write the formula for 3-bromo-6-methoxy benzaldehyde and discuss the chemical reactions you would expect this compound to undergo.

(b) Show by a series of reactions how an amine can be converted into an amide.

8. (a) Explain by means of suitable examples:

(i) the existence of tautomers,

(ii) the structural relationships among acid derivatives.

(b) Give the name and structural formula for an organic compound which belongs to each of the following groups:

(i) amino acid,

(ii) lachrymator,

(iii) hydrazone,

(iv) vitamin,

(v) sulfa drug.

UNIVERSITY OF TORONTO

FACULTY OF DENTISTRY

FACULTY OF FORESTRY

CHRISTMAS EXAMINATIONS, NOVEMBER 24, 1954—2:00 p.m.

PHYSICS

MECHANICS, PROPERTIES OF MATTER, HEAT

Examiner—A. C. H. HALLETT

Any six questions constitute a full paper. Candidates are permitted the use of slide rules and Clark's Tables.

1. (a) Discuss briefly the importance in experimental work of computing percentage errors wherever possible.

(b) In the laboratory a student measures the surface tension of water. He suspends a glass plate from the arm of a torsion balance and allows the long end of the plate to dip into the water. He then adjusts the balance and notes the reading on the scale when the film is just on the point of breaking, and finds that the same reading is obtained when a mass of 1.08 gms is placed on the scale pan. He measures the plate and finds that its length is 7.5 cm and its thickness is 0.1 cm. Calculate the surface tension of the water and the error in the value of the surface tension resulting from errors in measurement.

2. (a) State the conditions for equilibrium of a number of forces acting at a point, and explain how the use of vectors simplifies the solution of such problems.

(b) A man has a trailer which is essentially a rectangular box mounted on two wheels having a common axle which is 1.5 ft. from the rear end of the box. A steel brace fastened under the box projects 2 ft. from the other end and is attached at its end to the car. At a coal yard, the dealer tells the man to park so that the two trailer wheels are on the scale, and then loads the trailer uniformly with coal until, according to the scale, 2,000 lb. of coal has been put into the trailer. Assume that the floor of the trailer is horizontal, and calculate how much coal the man actually receives.

3. (a) Explain why for inelastic impact momentum is apparently not conserved.

(b) A dive-bomber, intent on bombing a certain target, dives directly towards the target with a velocity of 300 miles/hour, its path making an angle of 30° with the horizontal. When the plane is 1500 ft. above the ground, the bomb is released. Calculate how far short of the target the bomb falls.

4. (a) Describe the principles and action of a centrifuge.

(b) The planet Saturn has a mass of 5.63×10^{26} Kg and a mean diameter of 5.81×10^4 Km and rotates once on its axis in 10 hours 15 minutes. Assume that Saturn is spherical, and calculate the acceleration due to Saturn's gravity at its North pole and at its equator.

5. (a) If a circular ring and a solid disk begin together to roll without slipping down an inclined plane, explain why the solid disk reaches the bottom first.

(b) A flywheel in the form of a solid disk of mass 12 Kg and radius 1 m has fixed to it at its centre a hub of radius 0.4 m and mass 4 Kg. It is rotating at a speed of 1000 revolutions per minute when a brake shoe is applied to the hub; the coefficient of friction between the shoe and the hub is 0.3. Calculate the normal force which must be applied if the flywheel is to complete 50 revolutions before it comes to rest.

6. (a) Explain what is meant by the elastic limit and the breaking stress of a wire.

(b) A copper wire of circular cross-section, 50 cm long and 1 mm in diameter, is clamped at one end. At the other end are applied two forces equal to 30 newtons and 20 newtons respectively. The 30 newton force acts in a direction which makes an angle of 20° with the length of the wire. Calculate the extension of the wire.

7. (a) Explain what is meant by the 'Bernoulli Effect' and give examples of this effect in everyday life.

(b) A 30 cm length of uniform glass tubing having outside and inside diameters of 10 mm and 9 mm respectively, is sealed at each end. One end is attached to a solid spherical glass ball of diameter 1 cm. It is then placed in oil, the solid ball being immersed and the glass tube vertical, and it is observed that 15.4 cm of the glass tube remains above the surface of the oil. Calculate the density of the oil.

8. (a) Describe the methods by means of which heat may be transferred from one body to another, and give examples.

(b) A copper rod of circular cross-section having a diameter of 1 cm and a length of 50 cm is fixed so that one end is in liquid air at 83°K while the other is maintained at room temperature, 20°C . (i) Calculate the amount of liquid air boiled away per hour by the heat conducted down the rod. (ii) Would the liberated vapour have any effect on the amount of liquid boiled away? Explain.

9. (a) Describe one method which is used to liquefy gases.

(b) Calculate the number of joules of energy which must be removed from 20 litres of air at normal temperature and pressure so that it will be liquefied at 83°K .

DATA

Moment of Inertia of a Circular ring of mass M
and radius R about an axis through its centre
perpendicular to its plane $= MR^2$

Moment of Inertia of a Solid disk of mass M
and radius R about an axis through its centre
perpendicular to its plane $= \frac{1}{2}MR^2$

Universal Constant of gravitation $G = 6.66 \times 10^{-11} \text{ m}^3 \text{ Kg}^{-1} \text{ sec}^{-2}$

Glass:

Density 2.61 gms cm^{-3}

Copper:

Young's modulus $12.5 \times 10^{11} \text{ dynes cm}^{-2}$

Shear modulus $4.2 \times 10^{11} \text{ dynes cm}^{-2}$

Thermal conductivity $0.92 \text{ cal cm}^{-1} \text{ sec}^{-1} \text{ }^\circ\text{C}^{-1}$

Specific heat $0.091 \text{ cal gm}^{-1} \text{ }^\circ\text{C}^{-1}$

Air (gaseous):

Density at normal temperature and
pressure $1.29 \times 10^{-3} \text{ gm cm}^{-3}$

Specific heat $0.17 \text{ cal gm}^{-1} \text{ }^\circ\text{C}^{-1}$

Air (liquid):

Latent heat of vapourisation 52 cal/gm

UNIVERSITY OF TORONTO

FACULTY OF DENTISTRY

ANNUAL EXAMINATIONS, APRIL, 1955

PREDENTAL YEAR

PHYSICS

SOUND, ELECTRICITY AND MAGNETISM, LIGHT,
ATOMIC AND NUCLEAR PHYSICS

Examiner—A. C. H. HALLETT

Any six questions constitute a full paper. Candidates are permitted the use of Slide-rules and Clark's Tables.

1. (a) Describe briefly the experiment performed by Millikan to determine the charge of the electron.

(b) Calculate the energy required to remove an electron completely from the first Bohr orbit of Hydrogen.

2. (a) Describe an experiment you would carry out, and the apparatus you would use to measure the internal resistance of a dry cell.

(b) A phonograph pickup has an output of 1 volt at all frequencies between 100 and 10,000 cycles per second, and is connected across two resistances of 5,000 and 10,000 ohms respectively which are themselves connected in series. A condenser of 0.05 microfarads capacity is connected in parallel with the 10,000 ohm resistance. Calculate the voltage drop across the 10,000 ohm resistance at frequencies of 100, 1,000 and 10,000 cycles per second, and draw a rough graph of the variation of this voltage with frequency. Explain why this circuit is often known as a "bass boost" circuit.

3. (a) Explain in general terms why the impedance presented by an inductance to an alternating current increases both with the size of the inductance and with the frequency of the alternating current.

(b) A beam of electrons accelerated by 50 volts passes between two horizontal plates 0.5 cm apart. A potential difference of 500 volts is maintained across the plates, the upper plate being positive. A horizontal magnetic field directed at right angles to the electron path also passes between the plates. Calculate the strength of the magnetic field which must be applied if the electron beam is to pass undeflected between the plates, and draw a diagram showing the relative directions of the electron beam, the electric field and the magnetic field.

4. (a) Describe how two diodes may be used to rectify an alternating voltage.

(b) 100 kw of electrical power is to be transmitted over a transmission line having a total resistance of 40 ohms. Calculate the voltage which must be used in the line to limit the losses to 1%. If the generator delivers power at 2,200 volts, and the power is to be used at 220 volts, calculate also the turns ratio for the transformers required at each end of the line.

5. (a) With a particular photographer's flash-bulb and film, the recommended lens apertures are $f/11$ and $f/22$ when the distances between the lamp and the subject are respectively 10 ft. and 5 ft.; the shutter speed is $1/100$ sec in each case. Discuss whether or not this is physically reasonable.

(b) A student's desk is illuminated by an electric lamp which is 3 ft. above the desk and 2 ft. to the left of the student's book. If the recommended illuminance for reading is 25 ft-candles, calculate the required wattage of the lamp if the efficiency of tungsten lamps is 15 lumens per watt.

6. (a) A certain commercial flash-bulb for photography gives, according to the manufacturer, "5,000 lumen-seconds of $3,300^{\circ}\text{K}$ colour temperature light".

- (i) What is the physical meaning of this statement?
- (ii) How does this light differ from sunlight?
- (iii) Explain how a simple coloured filter placed over the lamp could give a better approximation to sunlight.

(b) Distinguish between the following angles, and, with the aid of clear diagrams, discuss briefly how they may be found.

- (i) Critical Angle of Refraction; (ii) Brewster's Angle;
- (iii) Diffracting Angle; (iv) Bragg Diffracting Angle.

7. (a) Discuss the experimental evidence which supports the idea of a planetary model of the atom.

(b) Calculate the velocity with which an electron will leave a Zinc plate when the plate is irradiated with light of wavelength 3000 A.U.

8. (a) Describe briefly the experiment which led to the discovery of the neutron, and discuss how the number of elementary particles which combine to form a neutral atom can be deduced. Explain also whether or not the total mass of these particles is equal to the mass of the atom.

(b) A gamma-ray of wavelength 0.261 A.U. collides with a free electron which is initially at rest. After collision the gamma-ray has a wavelength of 0.273 A.U. Calculate the velocity of recoil of the electron.

9. (a) Discuss briefly the mechanism believed to be responsible for the Sun's energy.

(b) The fission of ${}_{92}\text{U}^{235}$ gives 200 Mev of energy per atom, while the energy available from complete combustion of 1 kg of coal is 3.2×10^{14} ergs. Calculate the mass of ${}_{92}\text{U}^{235}$ which must disintegrate completely to give the same energy which is available from 1 kg of coal.

Data

Mass of Proton	1.67×10^{-24} gm
Mass of electron, m_0 ,	9.11×10^{-28} gm
Electron charge, e ,	1.60×10^{-19} coulomb
Radius of the First Bohr orbit of hydrogen	0.528 A.U.
Temperature of the surface of the Sun	5,800°K
Planck's Constant, h ,	6.62×10^{-27} erg sec
Velocity of Light, c ,	3.00×10^{10} cm sec ⁻¹
Avogadro's Number	6.02×10^{23} atoms per gm atom.
Energy Equivalent of 1 a.m.u.	931 Mev
Work Function of Zinc	3.8 eV

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ANNUAL EXAMINATIONS, 1955

PREDENTAL YEAR

ZOOLOGY

1. Write a note on Oögenesis of the frogs egg. Use diagrams to elucidate your answer.
2. (a) Draw a simple diagram to indicate the essential features of the circulatory system of an earthworm.
(b) List the functions of this system in this animal.
(c) By means of a table indicate how these functions are carried on in (1) Hydra, (2) Planaria, (3) A grasshopper.
3. Write a note on the function of the mammalian pancreas. Organize your answer under separate subheadings.
4. How is the flow of blood to different regions of the body controlled in a mammal?
5. Define, in a sentence or two, *each* of the following:
gene, meiosis, neurone, chromatid, trichocyst, cysticercus, synapsis, thrombocyte, centrosome, enzyme.

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UNIVERSITY OF TORONTO
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ANNUAL EXAMINATIONS, 1955

FIRST DENTAL YEAR

ANATOMY

Be relevant. Write legibly.

1. Give an account of the course of the lymphatic vessels from the teeth and gums to their termination in the great veins at the root of the neck, and note the chief groups of glands through which they pass.

2. Give an account of the maxillary sinus under the following headings:

(a) the walls;

(b) the relationships which the nerves, blood vessels and teeth bear to the walls.

3. Write short notes on:

(a) the thyroid gland;

(b) the mandibular joint;

(c) the superior cervical ganglion;

(d) the vertebral artery.

4. Describe the path taken by a sensory impulse from a root abscess on a lower molar tooth to the cerebral cortex, stating at what points you would find the cell bodies of the nerve fibres concerned.

5. (a) Name the veins entering the right atrium of the heart. Trace the course of the blood from here (right atrium) until it enters the aorta, noting in proper order all the valves through which it passes.

(b) Make a diagram of a kidney cut in longitudinal section from medial to lateral border, and label fully its parts.

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FACULTY OF DENTISTRY

FINAL EXAMINATION

COMPARATIVE DENTAL ANATOMY

FEBRUARY 12, 1955

Use diagrams wherever possible.

Marks

- (20) 1. Describe the similarities and point out the differences between:
 - (a) Ostracoderm plates, placoid scales and cycloid scales.
 - (b) Reptile scales and feathers of birds.
- (25) 2. What is meant by adaptive radiation?
Briefly illustrate this principle with reference to dentitions of placental mammals.
- (20) 3. Describe the differentiation of the enamel organ from the "Cap" stage until enamel is first deposited.
- (20) 4. What differences appear between the skull and jaws of Elasmobranch and Teleost fishes?
- (15) 5. Describe the dentition of:
 - (a) The horse
 - (b) A predatory selachian
 - (c) *Phascolotherium*.

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ANNUAL EXAMINATIONS, 1955
FIRST DENTAL YEAR
MICROSCOPIC ANATOMY

Answer questions 1 and 2 and any THREE of the following.

Marks

- 25 1. Describe, in detail, the structural components of the periodontal membrane and gingiva. Discuss the physiologic process of gingival recession.
- 15 2. Describe the histologic structures in dentin.
- 20 3. Describe the processes by which bony structures become altered in size and shape during the period of growth.
- 20 4. Compare and contrast the microscopic structure of smooth and striated muscle as they appear in both longitudinal and cross sections. Illustrate. Include a description of their blood supply in your answer.
- 20 5. Describe the microscopic structure of the thyroid gland and tell how and why its structure changes when iodine is deficient in the diet.
- 20 6. Describe the microscopic structure of a peripheral nerve. Illustrate. Describe the changes that occur when a peripheral nerve is severed if the severed stumps are brought and kept together.

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ANNUAL EXAMINATIONS, 1955

FIRST DENTAL YEAR

ORAL ANATOMY

Please use a separate examination book for PARTS A and B.

PART A

Please answer each question concisely.

1. If a child, $3\frac{1}{2}$ years old, is ill with a disease which manifests itself with a persistent high fever, which tooth crowns may be subjected to a developmental disturbance? Which crowns cannot be affected, and why not? Give the earliest age at which you could, by direct visual examination, observe the result of this disturbance on each affected tooth.

2. Tell, (a) how space is provided in the dental arches for the larger permanent successors to the deciduous incisors.

(b) how the first permanent molars arrive in correct occlusal relation to one another, considering the various terminal planes observed in the deciduous dentition.

3. Make a list of the muscles uniting the hyoid bone and the mandible. Give the innervation of each, and tell what function these muscles serve.

4. Draw the occlusal surface of 7 and label the following:

- (a) Distal marginal ridge.
- (b) Lingual groove.
- (c) Buccal ridge of the mesio-lingual cusp.
- (d) Mesial cutting arm of the disto-buccal cusp.
- (e) Distal triangular fossa.
- (f) Mesio-buccal groove.

PART B—GROWTH

INSTRUCTIONS: *Include sketches in answer.*

(a) Describe three main growth sites of the mandible.

(b) In not more than six lines each, indicate how each growth site contributes to the general growth of the mandible.

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ANNUAL EXAMINATIONS, 1955

SECOND DENTAL YEAR

BACTERIOLOGY

Answer any FIVE questions.

Answer concisely.

1. How do bacteria cause disease? Discuss with appropriate examples under the following headings:

- (a) In vivo growth requirements of bacteria.
- (b) Invasiveness.
- (c) Toxic metabolites.

2. Discuss the development of specific immunity against *S. typhosa* under the following headings:

- (a) Antigens involved.
- (b) The site of antibody formation.
- (c) Time of antibody formation.
- (d) In vitro demonstration of antigen-antibody reaction.

3. Using the Wasserman reaction as an example, discuss complement-fixation qualitatively under the following headings:

- (a) The nature of complement.
- (b) The test system.
- (c) The indicator system.
- (d) The meaning of hemolysis when the test and indicator systems are combined.

4. Outline the procedure in performing a lactobacillus count. Evaluate the significance of a lactobacillus count as a diagnostic procedure.

5. Discuss diphtheria under the following headings:

- (a) The mechanism of infection.
- (b) Diagnosis.
- (c) Treatment.
- (d) Prophylaxis.

6. Discuss Viridans streptococci under the following headings:

- (a) Habitat.
- (b) Relation to dental infections.
- (c) Relation to subacute bacterial endocarditis.

7. Discuss penicillin under the following headings:

- (a) Mechanism of action.
- (b) Susceptible organisms.
- (c) Development of bacterial resistance.
- (d) Toxic reactions.
- (e) Antibiotics which act synergistically or antagonistically with penicillin.

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ANNUAL EXAMINATION, FEBRUARY, 1955

SECOND DENTAL YEAR

BIOCHEMISTRY

Examiner—J. MANERY FISHER

Answer only THREE questions—the FIRST question and any other TWO.

1. (a) Describe the Krebs-Henseleit "ornithine" cycle.
(b) Write a concise account of the development of the methods used for investigating intermediary metabolism. Where possible use experiments to illustrate your answer.
2. (a) The iodine number of peanut oil is 90 and that of tallow is 40. In what units are these numbers expressed? What do these figures tell us about the nature of the two fats?
(b) Describe in general terms the method used in the laboratory for the determination of the iodine number of a fat.
(c) Describe how metabolic processes in the liver can alter the nature of the depot fats.
3. (a) Write the formula of adenylic acid. Name and give the chemical constitution of several compounds which contain adenylic acid.
(b) Describe the occurrence and biological importance of three of these compounds.
4. (a) What is meant by transamination? Describe three transamination reactions.
(b) Illustrate diagrammatically the interrelationships between the metabolism of carbohydrate, fat and protein (formulae not necessary). Indicate clearly the transamination reactions.
5. Write a short note on any *four* of the following:
 - (a) pantothenic acid, its occurrence and importance,
 - (b) factors controlling the blood sugar level,
 - (c) paper chromatography, the technique and its use,
 - (d) basal metabolic rate,
 - (e) the reason for the colour changes of indicators at different pH values.

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ANNUAL EXAMINATIONS, 1955

SECOND DENTAL YEAR

OPERATIVE DENTISTRY

Use Illustrations Whenever Possible.

1. Considering silver amalgam as a restorative material, enumerate the factors which insure maximum results in the following cavity preparations:

- (a) Class II MO or DO on an upper bicuspid.
- (b) DO on a lower 2nd deciduous molar.

2. (a) How can proper contour affect the ultimate success of any restoration? Illustrate carefully with drawings.

(b) What is the significance of a knowledge of microscopic anatomy of teeth, in its relation to operative dentistry?

3. Enumerate and enlarge upon the principles involved in the preparation of the Class IV restoration (e.g. two pin and a groove restoration).

4. In what respect do inlays differ from bridge abutments?

5. Orderly operative technique is a prime requisite for successful restorative dentistry. How is this exemplified in the preparation and restoration of a Class III Gold Foil?

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ANNUAL EXAMINATIONS, 1955

SECOND DENTAL YEAR

PHARMACOLOGY

Write plainly. Up to 5 marks will be added for neatness, legibility and concise answers.

Marks

- 12 1. Name three drugs used as respiratory stimulants; discuss their mode of action and sites of action.
- 11 2. Compare Cyclopropane and Nitrous Oxide as general anaesthetics in dentistry.
- 10 3. Discuss three drugs which may be used in premedication before general anaesthesia.
- 12 4. Discuss the pharmacology of four entirely different drugs employed in antiseptic mouth washes.
- 15 5. Discuss Silver Nitrate, Caustic Soda, and Nitric Acid as caustics.
- 16 6. Name at least six properties important in a drug useful as an antiseptic for general infections.
- 10 7. Prescribe a haustus containing 2 grams of Sodium Bromide, flavoured with a suitable Syrup.
- 9 8. Give mode of administration, common dosage forms, and synonyms for Methyl Salicylate, Hyoscine Hydrobromide, Nikethamide.

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ANNUAL EXAMINATIONS, 1955

SECOND DENTAL YEAR

PHYSIOLOGY

1. Outline the early and late changes that may result from an acute haemorrhage whereby about one-fifth of the blood volume has been lost.
2. (a) List the general types of anoxia that may be encountered.
(b) With regard to one of these types of anoxia, describe briefly
 - (1) Conditions that may cause it.
 - (2) Characteristic signs and symptoms.
3. (a) Explain how the monophasic and the diphasic recordings of action potentials are obtained on stimulation of a nerve.
(b) Discuss four ways whereby oedema may result from interferences with the basic mechanisms concerned in the regulation of fluid interchange.
4. (a) Describe briefly, with the aid of a labelled diagram, the component structures involved in a spinal reflex arc.
(b) Describe five characteristics of nervous reflex activity.
5. (a) Outline the functions of saliva.
(b) Describe the effects produced by removal of the pancreas.

Accounting

UNIVERSITY OF TORONTO
FACULTY OF DENTISTRY

ANNUAL EXAMINATIONS, 1955

THIRD DENTAL YEAR—DENTAL NURSING

PRINCIPLES OF ACCOUNTING

Marks

- 25 1. What is the purpose of a Trial Balance in double entry?
2. Name at least three Accounts Payable which a dentist may have.
3. Explain the meaning of Capital.
4. List five asset accounts.
5. Briefly outline the purpose of keeping records.

6. With the information given below, prepare a Statement of Income and Expenditures for Dr. A. C. Robb.

Daily receipts for the month of December are as follows:

Dec. 1, \$ 53.00	Dec. 16, \$ 60.60
2, 90.50	18, 536.50
4, 64.25	19, 370.00
5, 129.30	20, 342.00
6, 400.00	21, 54.50
7, 35.50	22, 43.00
8, 342.10	23, 154.50
9, 15.00	24, 325.25
11, 424.00	25, 290.00
14, 435.50	28, 250.00
15, 20.50	29, 10.00
	30, 14.50

- 75 December 1, 1954 Bank Balance \$1,234. All monies received have been deposited daily.

December 3. Issued the following cheques.

Rent for December \$100.

Telephone account \$12.50.

Monthly payment of \$124 on equipment.

C.O.D. order from Eaton's \$12.50.

10. Toronto Laundry Service, towels and linen \$9.

15. Advanced payment by cheque to dental nurse, \$80.

31. Made the following payments by cheque.
Dental Equipment Company, for dental supplies \$135.
Dental Nurse's salary \$69.20 and to Receiver General of Canada for her income tax, \$10.30.
Ashley Dental Company \$24.50, dental supplies.
Crosley-Smith Lab. Costs \$385.50.
Petty Cash Expenses \$5.34.
Consumers' Gas Company \$3.50.
Hydro \$9.40.
Personal withdrawal \$300.

Dr. Robb estimates he has used \$154 worth of supplies and drugs.

Depreciation on equipment is \$70.

Prepare a supplementary ledger account for the payroll.

Unemployment insurance of 50 cents was paid out of petty cash.

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ANNUAL EXAMINATIONS, 1955

THIRD DENTAL YEAR

DENTAL SURGERY AND ANAESTHESIA

Marks

- 20 1. Describe in detail the correct procedure in removing a maxillary right first permanent molar with widely divergent roots using local anaesthesia.
- 15 2. Write a brief note on the functions and proportions of the components of an injectable local anaesthetic solution.
- 20 3. Discuss the removal of the mandibular right first molar and the maxillary left third molar indicating the correct positions of the operator, chair and patient. Make a line drawing of the forceps indicated in each case.
- 20 4. Using diagrams outline the muco-periosteal flaps which would be raised for the following procedures:
 (a) A maxillary immediate denture insertion,
 (b) A fractured mandibular second bicuspid root,
 (c) A root resection of a maxillary lateral incisor,
 (d) The removal of an impacted mandibular third molar.
- 25 5. Accurately locate the puncture points for the anaesthetization of the inferior dental nerve, and the posterior superior alveolar nerves. What directions should the needles be advanced in each injection and where does one attempt to deposit the bulk of the solution in each case?

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FACULTY OF DENTISTRY

THIRD DENTAL YEAR

NUTRITION

1. (a) List Canada's Food Rules.
(b) Discuss reasons for the inclusion of each of the food groups.
(c) If the cost must be considered, what cheaper foods might be used?
2. A patient with rampant dental caries presents for treatment and is given a dietary record sheet to fill in for a week. On receipt of this completed record how would you proceed?
3. List and discuss briefly:
(a) Four fat-soluble vitamins.
(b) The water soluble vitamins known to be essential for human nutrition.
4. (a) How are the mineral and protein requirements of the body determined? Explain.
(b) What is the Calcium-Phosphorus ratio?
5. Define:
(a) Metabolism
(b) Basal metabolism
(c) Complete protein
(d) Essential amino acid.

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THIRD DENTAL YEAR

ORTHODONTICS

1. (a) Define the word orthodontics.
(b) What are the general practitioners' orthodontic responsibilities?
2. (a) Why do mandibular lateral incisors often experience difficulty in erupting into normal position?
(b) Give two unfavourable consequences to this difficulty and suggest an effective but simple treatment procedure for preventing either of these conditions.
3. List the favourable eruption sequence for upper and lower permanent teeth.
4. What is the advantage of the straight terminal plane and spacing through the deciduous molars?
5. Describe a program of myofunctional therapy for achieving normal function of:
 - (a) the masseter muscle
 - (b) the orbicularis oris.

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ANNUAL EXAMINATIONS, 1955
THIRD DENTAL YEAR
PATHOLOGY

Marks

- 20 1. Describe the aetiology and pathologic anatomy of a case of acute haematogenous osteomyelitis.
- 20 2. Describe the mechanism leading to the replacement fibrosis of an organ or a part of it.
- 20 3. Describe the development of a tuberculous tubercle and its subsequent fate.
- 20 4. Describe the tissue changes in a case of extensive therapeutic irradiation of the oro-facial region and what preparatory steps should be done beforehand.
- 20 5. Tabulate a list of questions to ask a patient in order to differentiate between a case of pulpitis and pericementitis and explain the significance of each question.

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THIRD DENTAL YEAR

PERIODONTICS

Marks

1. By means of drawings illustrate in detail
 - 10 (a) the ideal attachment of the gingival tissue to a fully erupted tooth.
 - 10 (b) the circulation of the peridental membrane.
- 20 2. Give in correct sequence and according to the theory of Dr. H. K. Box, the steps involved in the development of a true peridental pocket.
- 10 3. (a) List the main characteristics of Chronic Periodontitis Complex.
- 10 (b) Outline the steps to be followed in the case management planning for a patient with Chronic Periodontitis Complex.
- 10 4. (a) Describe in detail a theory of subgingival calculus formation, which explains its formation into microscopic compartments.
- 10 (b) Explain the relative significance of supragingival calculus and subgingival calculus in terms of associated periodontal pathology.
- 10 5. (a) List the clinical signs and symptoms of acute necrotic gingivitis.
- 10 (b) Outline in proper sequence the steps to be followed in treating a patient with acute necrotic gingivitis.

Total 100

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THIRD DENTAL YEAR

PROSTHODONTICS

Marks

- 20 1. Describe concisely the cause and correction of the following errors which may be observed at the try-in stage of complete maxillary and mandibular dentures:
- (a) Hyperocclusion of the second molars in checking centric occlusion;
 - (b) The median line of the anterior tooth arrangement is correct when the dentures are placed in the articulator, but the median line of the mandibular denture is observed to be displaced laterally when the try-in dentures are inserted in the mouth;
 - (c) When the patient attempts to close in centric occlusion, unilateral premature contact of the posterior teeth is observed.
- 15 2. (a) Define the rest relation of the mandible.
(b) What is the result of:
- (i) Increasing the vertical dimension beyond physiological limits;
 - (ii) Decreasing the vertical dimension below the physiological requirements.
- 15 3. Write an explanation of the purposes of occlusal rests and explain how they are used to stabilize a *removable* partial denture.
- 15 4. A patient has been assigned to you for *removable* partial denture service. Outline the steps in sequence for treating this patient following the required Faculty clinic procedure.
- 20 5. Describe the step by step preparation of a mandibular first bicuspid tooth for a three-quarter veneer crown to be used as an attachment for a fixed restoration.
- 15 6. Give an outline of an examination procedure leading to the diagnosis and treatment plan for a patient requiring a *fixed* partial denture.

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ANNUAL EXAMINATIONS, 1955

THIRD DENTAL YEAR

SURGERY

1. Define *each* of the following:
 - (a) Infection
 - (b) Puncture wound
 - (c) Pathological fracture
 - (d) Haematemesis.
2. Describe the clinical picture of chronic osteomyelitis, discussing the factors predisposing to chronicity in infection of bone.
3. When a segment of tissue dies, on what factors does what ultimately happens to that piece of dead tissue depend? Describe the body's way of dealing with a small aseptic infarct of the kidney.
4. Discuss the measures taken to prevent and treat surgical shock in a modern recovery room.
5. Describe the clinical signs and symptoms of cervicofacial actinomycosis. What structures may be involved by spread of the disease in this location?

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ANNUAL EXAMINATIONS, 1955

FOURTH DENTAL YEAR

DENTAL ORAL SURGERY AND ANAESTHESIA

Marks

- 20 1. Discuss the treatment of dental infections under the following headings:
- (a) Treatment directed at the bacteria concerned.
 - (b) Treatment related to the local pathological condition.
 - (c) Treatment aimed at improving the patients general well being.
- 20 2. (a) Give a simple classification for fractures of the jaws.
- (b) Outline briefly the etiology of fractures. What type of radio graphic studies should be made when a fracture is suspected? Discuss the specific application of each.
- (c) Briefly outline your treatment for a fracture through the angle of a mandible with a goodly complement of teeth, but exhibiting marked upward and medial displacement of the posterior fragment (with no teeth in the posterior fragment).
- 20 3. What basic factors should be taken into account and what precautions should be observed when handling the surgical treatment of dental patients that present with the following conditions:
- (a) A history of coronary occlusion?
 - (b) A history of rheumatic heart disease?
 - (c) A case of suspected diabetes?
- 20 4. (a) Describe in detail the signs and symptoms exhibited by a patient when in the surgical stage of nitrous oxide-trilene anaesthesia.
- (b) Describe the signs of overdose and indicate what should be done to correct this condition if it should accidentally arise.
- 20 5. Describe in detail with diagrams the correct method of removing a lower second molar the occlusal surface of which is approximately level with the gum line and when the mesial of the third molar and the distal of the first molar are almost in contact over it.

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FACULTY OF DENTISTRY

ANNUAL EXAMINATIONS, 1955

FOURTH DENTAL YEAR

DENTAL PRAXIS

PART A. ETHICS AND JURISPRUDENCE

Marks

- 20 1. Write brief notes on the following:
- (a) Sacerdotal Medicine.
 - (b) Early dentistry in China.
 - (c) Tripod of a Profession.
 - (d) Dental Education in Canada. ✓
- 20 2. (a) Define negligence and malpractice.
- (b) What types of evidence are acceptable in court?
 - (c) State the legal responsibilities of the dentist to the patient. ✓
 - (d) What relationship does secrecy have to dental practice?
- 20 3. (a) State the ethical characteristics of a profession.
- (b) From the standpoint of ethics write briefly on the following: advertising; patents; consultations; split fees. ✓

PART B. PRACTICE MANAGEMENT

Please use a separate Examination Book. ✓

- 20 1. (a) Name 10 considerations that are important in attracting desirable patient patronage to your office.
- (b) What are the dentists chief resources to earn an income?
- 20 2. What factors should be considered in the determination of a professional fee?

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ANNUAL EXAMINATIONS, 1955

FOURTH DENTAL YEAR

DENTAL RADIOLOGY

1. (a) Differentiate between diagnosis and radiodontic interpretation.

(b) What are the normal anatomical landmarks which may be seen in a radiograph in the maxillary and mandibular regions?

(c) What is the radiographic differential diagnosis between sclerosing osteitis and hypercementosis?

2. (a) Discuss the various radiolucencies that can occur in the crown of a tooth both pathologic and non-pathologic.

(b) Discuss sclerosing osteitis under the following headings: (i) etiology, (ii) various manifestations, (iii) radiographic differential diagnosis.

(c) How can we distinguish between apical abscess, granuloma, cyst and maxillary sinus on a radiograph?

3. (a) Differentiate between external and internal resorption.

(b) Name the various types of external resorption which may occur.

(c) What is the radiographic differential diagnosis between external resorption of the root, foreshortening, root resection, developing tooth root?

4. (a) What is the minimum number of films which constitute a full mouth radiodontic examination? State your reasons.

(b) Describe your technique for producing a good periapical radiograph of the upper central incisor region.

(c) If a fracture of the jaw is suspected, what type of radiographs must be taken?

5. (a) Name the solid odontogenic tumours and describe their radiographic appearance.

(b) What is meant by invagination? Describe its radiographic appearance and discuss its clinical significance.

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FOURTH DENTAL YEAR

MEDICINE

1. (a) What are the three main types of jaundice?
(b) Describe briefly the disorders that occur in bile pigment metabolism in each of them.
(c) Show how these changes affect the various laboratory tests used to distinguish them.
2. Discuss Rheumatic Fever under the following headings:
(a) Cause.
(b) Clinical signs and symptoms in the acute phase.
(c) Later manifestations.
(d) Prevention.
3. Discuss Iron Deficiency Anaemia and Pernicious Anaemia under the following headings:
(a) Cause.
(b) Abnormalities in the Peripheral blood.
(c) Abnormalities in the mouth.
(d) Complications.
(e) Treatment.
4. Write a brief note on:
(a) Tetanus.
(b) Diabetes Mellitus.
(c) Coronary Thrombosis.
(d) Bronchiectasis.
5. Write an account of the aetiology, symptoms, signs, and treatment of Tabes Dorsalis.

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ANNUAL EXAMINATIONS, 1955

FOURTH DENTAL YEAR

OPERATIVE DENTISTRY

Marks

- 20 1. (a) How would you obtain the maximum resistance form in
- (i) Class II cavity preparation for a gold inlay
 - (ii) Class II cavity preparation for an amalgam.
- (b) Describe the direction and location of the grooves in the preparation of a three-quarter crown for an upper central incisor.
- (c) Draw a diagram to illustrate a buccal-lingual cross-section of a Class I cavity in a lower first bicuspid.
- 20 2. (a) How would you treat a small accidental exposure of the mesial horn of an upper central incisor?
- (b) On examining a radiogram it is obvious that the pulp will be exposed in the cavity preparation. What would be your plan of treatment of this case?
- 20 3. (a) A patient presents with a crescent shaped fracture on the labial of a porcelain jacket crown. Diagrammatically show re-preparation of this tooth to prevent a similar fracture.
- (b) Describe your method of treating a tooth with a Class V amalgam filling which has been recently filled and is now very sensitive to cold.
- 15 4. Indicate briefly the steps you would follow in consultation and examination if a man aged 30 came to your office asking to become one of your patients. All lower teeth are present. The molars on the upper right side have all been extracted.
- 25 5. Describe your method of treating a tooth that is:
- (a) Sensitive to cold but not to heat.
 - (b) Sensitive to heat but not to cold.
 - (c) Sensitive to percussion but not to heat or cold.
 - (d) Sensitive to percussion and heat.
 - (e) Sensitive while patient is lying down but not in the erect position.
 - (f) Sensitive gingival margins.

UNIVERSITY OF TORONTO
FACULTY OF DENTISTRY

ANNUAL EXAMINATIONS, 1955

FOURTH DENTAL YEAR

ORTHODONTICS AND PEDODONTICS

PART A—ORTHODONTICS

INSTRUCTIONS: *Include sketches in each answer.*

1. List five factors predisposing to the occurrence of orthodontic deformity. Outline preventive control of these predisposing factors.

2. A patient age nine years has lost the mandibular right second deciduous molar. The first permanent molar posterior to the space has drifted forward three millimetres. Describe in detail a suitable method of restoring the space for the second bicuspid under the following headings:

- (a) Type of appliance
- (b) Appliance construction
- (c) Appliance care and adjustment.

3. Describe the type of malocclusion which may be caused by the following habits:

- (a) Lip biting
- (b) Thumb sucking
- (c) Tongue thrusting.

PART B—PEDODONTICS

INSTRUCTIONS: *Answer in a separate book.*

Answer any THREE of the following four questions:

4. What is meant by the primate spaces? What is their significance, if any, in the mixed dentition?

5. A child of 7 years of age has a 3 mm. space between the upper permanent central incisors. Give *five* possible reasons for the existence of this space.

6. On examining a 4 year old child, it is found that the four mandibular deciduous molars have to be extracted. What recommendation would you make to the parent regarding the treatment of the mouth from the time of the extraction of these teeth, until the bicuspid have fully erupted?

7. Name at least *four* precautions that should be observed to protect the child from accident during or after operative procedures.

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UNIVERSITY OF TORONTO
FACULTY OF DENTISTRY

ANNUAL EXAMINATIONS, 1955

FOURTH DENTAL YEAR

PERIODONTICS

Marks

- 5 1. (a) Classify functional activities of the teeth on the basis of degree or amount.
- 15 (b) Describe using drawings the effect of various amounts or directions of function of individual teeth on their supporting periodontal structures.
- 20 2. Describe the effects of wear of the teeth.
- 20 3. Outline a plan for occlusal correction by grinding.
- 10 4. (a) Describe a classification of periodontal pockets.
- 10 (b) Describe the principles and methods which are efficient in the treatment of one of the types of pockets.
- 5. Discuss abnormality of temporo-mandibular joint function on the basis of:
 - 10 (a) Examination when abnormality of joint function is suspected.
 - 10 (b) An outline of treatment procedures.

UNIVERSITY OF TORONTO
FACULTY OF DENTISTRY

ANNUAL EXAMINATIONS, 1955

FOURTH DENTAL YEAR
PREVENTIVE DENTISTRY AND
DENTAL PUBLIC HEALTH

(The answer to question 3 is to be written in a separate book.)

Marks

- 15 1. Discuss the dietary control of dental caries.
- 15 2. Discuss the addition of fluorides to water supplies as a means of controlling dental decay.
- 30 3. Describe briefly:
- (a) What are the obligations and opportunities of a dentist to the dental health of his community?
- (b) How you would proceed in your town to organize a programme for better dental health?
- (c) What are the objectives of Health Unit organizations; what services are usually provided?
- 20 4. Evaluate the significance of nutrition in relation to tooth formation.
- 20 5. What are the preventive aspects of operative dentistry?

Prostodontics

PROSTHODONTICS

8 | 8 are not present, | 2 has large silicate fillings in the mesial and distal surfaces likely to last for 2 years, | 7 has a large M-O-D amalgam filling which shows evidence of breakdown.

UNIVERSITY OF TORONTO
FACULTY OF DENTISTRY

ANNUAL EXAMINATIONS, 1954-1955

FIRST YEAR—DENTAL HYGIENE

DENTAL ANATOMY

1. Define the following terms:

- (a) Clinical crown
- (b) Pulp horn
- (c) Alveolar process
- (d) Mesio-occluso-buccal point angle
- (e) Embrasure.

2. Briefly describe the general external shape and contours of the upper right second permanent molar. (Drawings may be used if desired.)

3. What is the human deciduous dentition? What purpose does it serve?, and for how long? What are the replacements for each unit of the deciduous dentition?

4. Describe, (using drawings if desired), the pulp chamber, canal, etc., of the upper left central incisor in a child 9 years old.

UNIVERSITY OF TORONTO

FACULTY OF DENTISTRY

ANNUAL EXAMINATIONS, 1955

DENTAL HYGIENE—FIRST YEAR

DENTAL RADIOGRAPHY

1. (a) Draw a diagram of an x-ray tube and discuss the production of x-rays.

(b) What are the chief properties of x-rays?

(c) Define radiopaque, secondary radiation, radiology.

2. (a) What are four principle difficulties involved in taking a radiograph of the upper second molar region? Why is more exposure needed for this than other regions?

(b) How can we overcome elongation and foreshortening of our images? If we must err, which condition is preferable?

(c) What is the position of the head in taking radiographs of

(i) the upper anterior region

(ii) the upper second molar region

(iii) the lower incisor region

(iv) the lower molar region?

3. (a) What is the advantage in having films developed immediately when taking a full mouth survey?

(b) Name the constituents of a developing solution and briefly state the function of each component.

(c) State how you would determine the difference between an underexposed and underdeveloped film; overexposed and overdeveloped film.

4. (a) Radiographs can be faulty due to improper technique or careless processing. Name five causes of faulty radiographs which are due to technique and five causes of faulty radiographs which are due to processing. Suggest methods of overcoming these problems.

(b) How can the efficiency of our fixing solution be tested?

5. (a) Define radiodontic interpretation.

(b) Name and discuss the five requisites necessary for successful interpretation of dental radiographs.

UNIVERSITY OF TORONTO
FACULTY OF DENTISTRY

FACULTY OF PHARMACY

ANNUAL EXAMINATIONS, 1955

FIRST YEAR

ENGLISH COMPOSITION

Examiners—THE STAFF IN ENGLISH

Candidates will write an essay of approximately 1,000 words on ONE of the following subjects. In addition to being well-written (punctuation, spelling, diction, sentence structure, paragraph structure), the essay should constitute a sound, logically developed argument.

1. The central theme in *A Passage to India*.
2. The central theme in *Tess of the D'Urbervilles*.
3. The central theme in *Joseph Andrews*.

English literature

UNIVERSITY OF TORONTO
FACULTY OF DENTISTRY
FACULTY OF PHARMACY

ANNUAL EXAMINATIONS, 1955

FIRST YEAR

ENGLISH LITERATURE

Examiners—THE STAFF IN ENGLISH

Answer FIVE questions: the two questions in PART A and ONE question from each of PARTS B, C, and D. Do not answer two questions dealing with the same text; for example, if you are writing on King Lear in PART A do not answer on King Lear in PART B.

Each Part is worth 25 marks. Question 1 is valued at 10 marks, Question 2 at 15 marks.

PART A

1. Explain briefly [one paragraph] why an understanding of *one* of the following characters is important for an understanding of the novel in which he or she appears:

(a) Joan Durbeyfield, (b) Pamela Booby, (c) Ronnie Heaslop.

2. Explain briefly [one or two paragraphs] how *one* of the following statements contributes to an understanding of the play from which it is drawn:

(a) Thou, nature, art my goddess; to thy law
My services are bound.

(b) I'll say, a strange man is a marvel, with his mighty
talk; but what's a squabble in your backyard, and
the blow of a loy, have taught me there's a great
gap between a gallous story and a dirty deed.

(c) Promise was that I
Should Israel from Philistian yoke deliver;
Ask for this great Deliverer now, and find him
Eyeless in Gaza at the Mill with slaves,
Himself in bonds under Philistian yoke.

(d) Woe unto me when all men praise me! I bid you
remember that I am a saint, and that saints can
work miracles. And now tell me: shall I rise
from the dead, and come back to you a living woman?

PART B

3. "The strange fact is that those who love Lear most are, at different times throughout the play, the direct cause of his greatest agonies." Discuss.

4. "The Chorus, rather than Samson, is the most important character in *Samson Agonistes*." Discuss.

5. By referring to certain of the characters who individually might appear to be the villain of the piece, explain what Shaw meant by his statement that "there are no villains in *St. Joan*."

6. Assess the respective claims of Alec, Angel, and the President of the Immortals to be considered the villain of Hardy's novel.

7. "The comic artist exposes folly and vice." What are the vices exposed by Fielding in *Joseph Andrews*? Show that you can distinguish between a folly and a vice by citing an instance in *Joseph Andrews* where Fielding exposes folly.

8. Discuss the use of symbolism in *A Passage to India*.

PART C

9. "The Love Song of J. Alfred Prufrock" begins

"Let us go then, you and I"

and ends

"We have lingered in the chambers of the sea

By sea-girls wreathed with seaweed red and brown

Till human voices wake us, and we drown."

Discuss the identity of the *I*, the *you*, and the *we* of the poem.

10. On the evidence presented by either "Tintern Abbey" or the sonnets, how accurate is it to say that Wordsworth practises in his poetry what he preaches in his Preface to *Lyrical Ballads*?

11. Which of Browning's poems have you found most impressive? Which have you found relatively unimpressive? Give reasons for your choices.

PART D

12. Disregarding similarities of prose style, explain why there can be no doubt that "The Function of Criticism at the Present Time" and "Sweetness and Light" were written by the same author.

13. To what extent are the first three books of *Gulliver's Travels* a necessary preparation for the final book?

14. "Butler, Newman, and Mill each had an important message to bear to their contemporaries. They have little of importance to say to the mid-twentieth-century Canadian." Discuss this statement in the light of your reading of *one* of the authors cited.

Food Chemistry.

UNIVERSITY OF TORONTO

FACULTY OF DENTISTRY

ANNUAL EXAMINATIONS, 1955

DENTAL HYGIENE—FIRST YEAR

FOOD CHEMISTRY

Examiner—B. E. BROWN

Candidate will answer any FIVE of the following questions.

1. (a) Define any *four* of the following:

- (i) Law of conservation of mass
- (ii) Law of constant composition
- (iii) Law of multiple proportions
- (iv) Law of reciprocal proportions
- (v) Equivalent weight
- (vi) Normal solution
- (vii) Molar solution.

(b) Differentiate between “compounds” and “mixtures”. Include in your answer tests which may be used to distinguish one from the other.

2. (a) By the use of examples outline the three methods of nomenclature of alcohols.

(b) Differentiate between: (i) primary, (ii) secondary, (iii) tertiary alcohols with respect to structure and exposure to oxidation. Give equations to illustrate your answer.

3. Outline the preparation of an aldehyde and a ketone as well as three tests that serve to show the difference in chemical properties of the two. Give equations for all reactions involved.

4. Outline with equations the reactions of aldehydes and ketones with any *three* of the following:

- (i) alcohols
- (ii) hydroxylamine
- (iii) chlorine
- (iv) sodium hydroxide and iodine
- (v) concentrated sodium hydroxide.

Distinguish between “addition” and “substitution” reactions in the above with reference to the probable mechanics of the reaction.

5. Classify the proteins with respect to their characteristic properties, including a specific example for each class.

6. Give structural formulae for the following:

- (i) sodium oleate
- (ii) ethyl alcohol
- (iii) carbinol
- (iv) acetone
- (v) ethyl ether
- (vi) fructose
- (vii) pentene-2
- (viii) benzene
- (ix) ferric acetate
- (x) 2,4-dimethyl-5'-methoxy-5-ethyl-octane.

UNIVERSITY OF TORONTO
FACULTY OF DENTISTRY

ANNUAL EXAMINATIONS, 1955

DENTAL HYGIENE—FIRST YEAR

GROSS ANATOMY

PART A—SYSTEMATIC ANATOMY

Be relevant. Write legibly.

67%

1. Name the four valves of the heart and state where each is situated and what chambers it separates.

2. Name the structures that pass into or out of the liver at the portal fissure and note the function of each structure.

3. Describe the shape of the stomach, noting its parts, (*or* draw a large diagram and label fully).

4. (*a*) Describe cancellous (spongy) bone and state where it is found.

What is the use of the marrow contained in it?

(*b*) Describe the synovial membrane of a joint.

(*c*) Name the parts of the uterus and also the layers in its wall.

PART B—ANATOMY OF THE HEAD AND NECK

To be answered in a separate book.

Please answer each question concisely.

33%

1. Where is the Parotid Gland? How and where does its secretion enter the oral cavity?

2. Where does the Mandibular Nerve originate? What is its course? What does it supply, and with what kind of innervation?

3. Name three muscles that either end in or pass through the Modiolus. Give the motor innervation of each, and tell the action of each muscle.

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UNIVERSITY OF TORONTO
School of Physical and Health Education

Annual Examination, 1954-55
First Year

HEALTH EDUCATION — Time; $2\frac{1}{2}$ hours.

Be relevant. Write legibly. Drawings may be used if desired.

1. Write an account of the chambers, openings, and valves of the heart.
2. Describe the parts of the Central Nervous System, and state where each part is located.
3. Write concise notes on:
 - (a) functions of bone;
 - (b) the urinary bladder;
 - (c) the pancreas;
 - (d) the ovaries;
 - (e) bursae.
4. Define:
 - (a) urethra;
 - (b) anatomical position;
 - (c) capillary;
 - (d) synovial fluid;
 - (e) lymph;
 - (f) ligament;
 - (g) areolar tissue.
5. Give an account of muscle under the following headings:
 - (a) types;
 - (b) characteristics of each type;
 - (c) structure of the commonest type.

UNIVERSITY OF TORONTO
FACULTY OF DENTISTRY
ANNUAL EXAMINATIONS, 1955
FIRST DENTAL HYGIENE YEAR
HISTOLOGY

Marks

- 20 1. Describe the structural elements of the gingiva and periodontal membrane. Illustrate.
- 15 2. (a) What are the effects of tension and pressure on bone?
 (b) What is physiologic mesial drift?
 (c) How does cementum differ from bone?
- 15 3. Explain what is meant by (a) gnarled enamel, (b) secondary dentin, (c) Nasymth's membrane, (d) Hertwig's epithelial root sheath, (e) enamel organ.

UNIVERSITY OF TORONTO
 SCHOOL OF NURSING
 DIVISION OF PHYSICAL AND OCCUPATIONAL THERAPY
 DENTAL HYGIENE

ANNUAL EXAMINATIONS, 1955

PSYCHOLOGY 102

Examiners—R. C. JOYNER
 J. G. McMURRAY

Candidates will write on any THREE questions. All questions have equal value.

No examination aids may be used.

1. Fully outline experimental and real-life evidence relevant to man's needs for physical security, emotional security and mastery.

2. (a) Distinguish between the mental hygiene and the traditional medical and psychiatric points of view in their approaches to understanding childhood.

(b) Outline the mental hygiene frame of reference and discuss how you might apply it in any real-life or professional situation you care to describe.

3. Write brief notes on any SEVEN of the following:

- (a) Marasmus
- (b) Customs, folkways, and taboos
- (c) The preservation and enhancement of the phenomenal self
- (d) Psychological mothering
- (e) Freud's life and death instincts
- (f) Homosexuality
- (g) Pre-natal influence
- (h) Hospitalization of the pre-school child
- (i) Rhythmic, exploratory sensations
- (j) Differing maturing rates between boys and girls in adolescence
- (k) The development of stuttering and its treatment
- (l) Parent-school partnership during the school age period
- (m) Self-consistency.

4. Outline the major mental hygiene implications of any TWO developmental stages. Suggest the relevance of them to your professional work.

UNIVERSITY OF TORONTO
FACULTY OF DENTISTRY

ANNUAL EXAMINATIONS, 1955

SECOND DENTAL HYGIENE YEAR

DENTAL HYGIENE AND ORAL PROPHYLAXIS

1. Describe, using a drawing, the characteristics of a type of periodontal pocket which is a gingival pocket.
2. Give an outline of the principles and methods which are applicable to the reduction of depth of periodontal pockets.
3. (a) What conditions favour the formation of calculus?
(b) Give a suitable classification of calculus.
(c) Briefly discuss the significance of calculus.
4. Of what types or degrees of gingivitis are the following signs or symptoms indicative?
 - (a) Bright red colour of gingivae.
 - (b) Bluish red colour of gingivae.
 - (c) Interdental papillae appear cut off and cupped out.
 - (d) Marked swelling of gingivae, labial surface, anterior teeth.
 - (e) Generalized enlargement of gingivae, firm consistency and fairly normal colour.
5. In your opinion, why should a patient be convinced of the importance of home care of his mouth?

UNIVERSITY OF TORONTO
FACULTY OF DENTISTRY

ANNUAL EXAMINATIONS, 1955

DENTAL HYGIENE II

DENTAL PUBLIC HEALTH

1. Since 1840 there have been events which, in the history of Dentistry, have influenced the progress of dental public health. Describe three events you consider most important.

2. State very briefly who is responsible for the following public health services and under what legislation they are provided:

- (a) Hospital care for mariners.
- (b) Communicable disease control in a Health Unit.
- (c) Dental Services for Eskimos and Indians.
- (d) Safe water supply in a Health Unit area.
- (e) Dental services in mental hospitals and sanatoria.

3. A survey is a method for collecting selected items of information on population groups.

(a) List and discuss the specific purposes for which dental surveys are undertaken.

(b) Name the steps to be considered when preparing a school dental inspection programme in a small town. Enlarge briefly on *three* of these.

4. Write short notes on *two* of the following subjects:

- (a) The role of a Dental Hygienist in Public Health.
- (b) Fluoride therapy in caries prevention.
- (c) Methods and media used in dental health education.

5. Define very briefly the following terms:

- (a) Active immunity.
- (b) Prevalence of dental disease.
- (c) Incidence rates.
- (d) Environmental Hygiene.
- (e) Health Insurance.
- (f) Public Relations.

UNIVERSITY OF TORONTO
FACULTY OF DENTISTRY

ANNUAL EXAMINATION, 1954-55

COURSE IN DENTAL HYGIENE I

PATHOLOGY

1. Give a brief definition of oedema, and describe how inflammatory oedema may be recognized clinically as it affects dental tissues.
2. List the signs and symptoms of a lesion that would indicate the presence of a squamous-cell carcinoma of the lip.
3. Define the word embolism, and describe the clinical significances of various kinds.
4. Give a concise definition for the following terms:
 - (a) Haematoma
 - (b) Haemorrhage
 - (c) Focal infection
 - (d) Hypoplasia
 - (e) Exudate.
5. Explain the purpose of removing various accretions from the teeth during oral prophylaxis.

UNIVERSITY OF TORONTO
FACULTY OF DENTISTRY

ANNUAL EXAMINATIONS, 1955

DENTAL HYGIENE—SECOND YEAR

PHARMACOLOGY

1. What properties would you look for in a solution which has been proposed for use as a topical anaesthetic?
2. What are the basic components of dentifrices and what are the specific indications for each type?
3. Of what value is the use of a mouthwash in improving a patient's oral hygiene?
4. What precautions would you take to prevent cross infection from one patient to another in a dental office?

UNIVERSITY OF TORONTO

Faculty of Medicine

1955

Division of Physical & Occupational Therapy
(Dental Hygiene II)

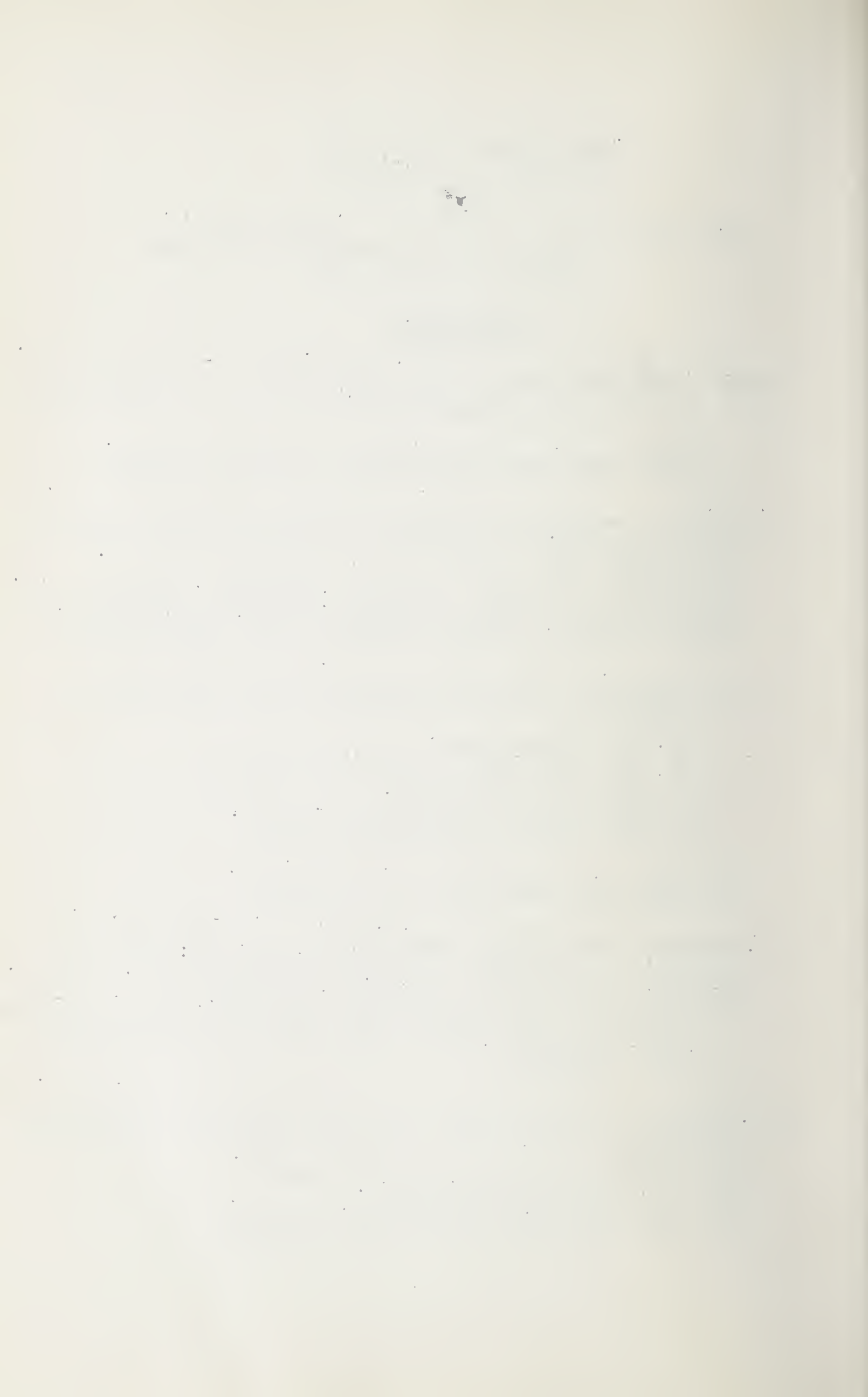
PHYSIOLOGY

Note: Candidates must answer questions 1 - 3 and either 4 or 5 plus either 6 or 7.

FIVE questions constitute a complete paper.

1. Write a sentence defining or describing any ten of the following:
SPHINCTER, PH, CAROTID BODY, SEMILUNAR VALVES, SINO-AURICULAR NODE, SECRETIN, HORMONE, PROTEINURIA, CORPUS LUTEUM, STEROID, MAREY'S LAW, MICTURITION.
2. (a) Describe the part played in the formation of urine by:
 1. The glomerulus;
 2. The proximal convoluted tubule;
 3. The loop of Henle;
 4. The distal convoluted tubule.

(b) List the functions of the liver.
3. Discuss "The use of carbohydrate in the mammalian organism" under the following headings:
(a) digestion and absorption; (b) fates after absorption; (c) the blood sugar level in (i) health, (ii) diabetes.
4. Discuss the physiology of blood under the following headings:
 - (a) the composition of whole blood.
 - (b) the clotting of blood.
 - (c) the classification of the anemias.



Second Year, Dental Hygiene, PHYSIOLOGY (contd)

5. (a) Describe the nervous and chemical factors which control respiration in man.
- (b) In what types of anoxia may cyanosis be found? Why?
- (c) What factors affect the vital capacity?
6. (a) Discuss the control of the secretion of gastric juice.
- (b) Describe briefly the symptoms associated with a discrepancy between need for insulin and its supply in the body.
- (c) What is the Hering-Breuer reflex?

Describe in detail its role in the physiology of circulation.

7. Write a brief note on each of the following:
- (a) Factors responsible for maintaining blood pressure.
- (b) The chemical nature and physiological action of the materials elaborated by the adrenal cortex.
- (c) The functions of the thyroid gland.

UNIVERSITY OF TORONTO
FACULTY OF DENTISTRY

ANNUAL EXAMINATIONS, 1955

DENTAL HYGIENE—SECOND YEAR

PREVENTIVE DENTISTRY

1. Discuss Miller's theory of dental caries.
2. A four year old child presents with the two maxillary central incisors lost as a result of an accident. What would be the advice given to the parents and why?
3. (a) Compare 3 methods of dietary analysis and state which you prefer in giving advice to patients. Give reasons.
(b) How would you conduct a diet consultation with a patient? Discuss.
4. List three objections which might be raised by housewives to the use of Canada's Food Rules, and give a concise answer for any one of the three.
5. Tabulate:
 - (a) The benefits of orthodontic treatment
 - (b) Useful procedures to ensure good oral health during orthodontic treatment.

University of Toronto
School of Social Work

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S. W. 1 - The Field of Social Welfare
(O.T. & P.T. Section)

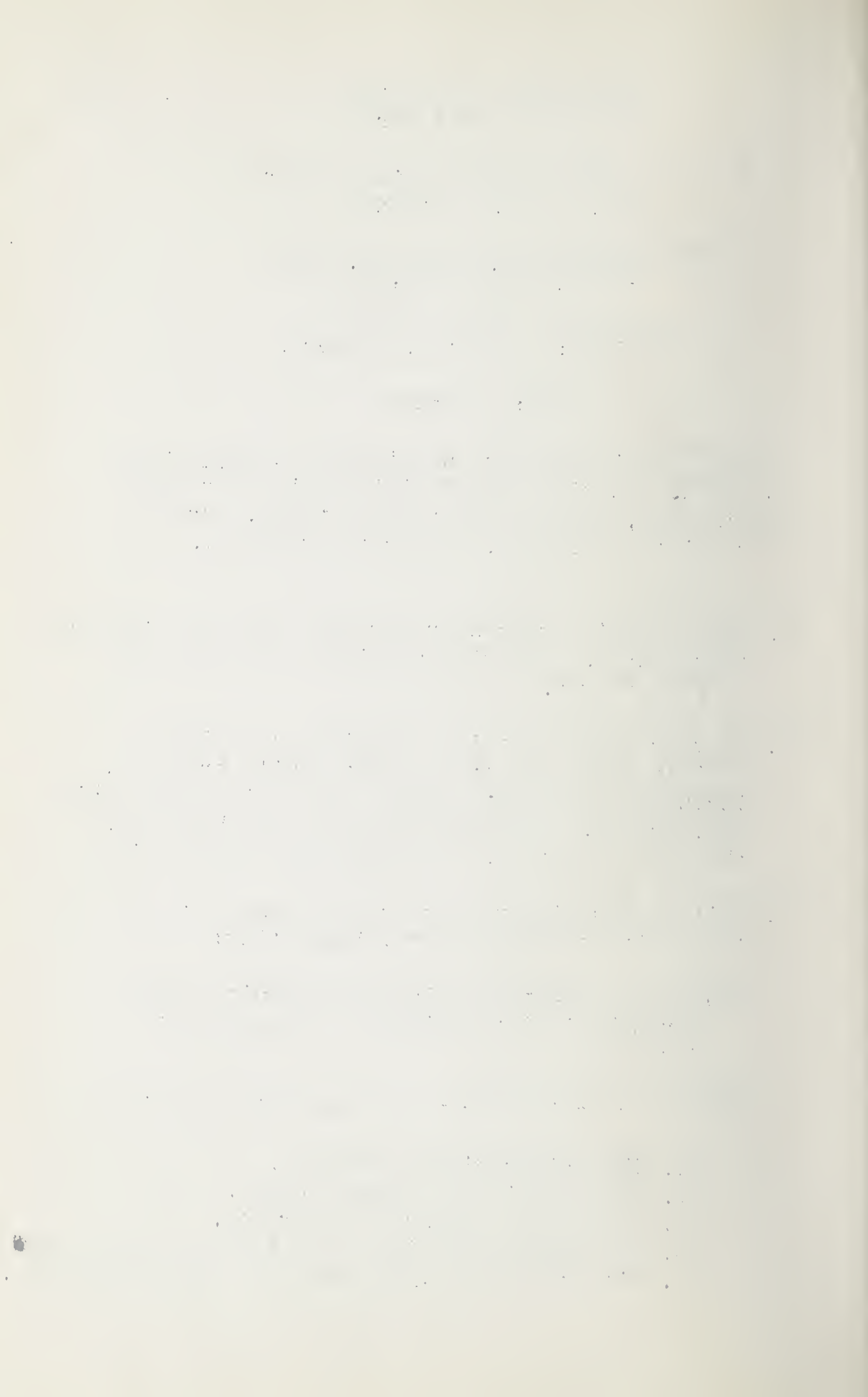
Final Examination, April 14, 1955
II Year Dental Hygiene

Examiner: Stuart K. Jaffery.

Time: 1 hour.

Candidates will answer question 1, and One other question. In view of the limited time for this examination, please take time to think, arrange your points logically, and write precisely.

1. Name three(3) reading references you have used for this course. Describe precisely how each was helpful to you.
 2. In your employment in a hospital or clinic a patient tells you that he has family troubles, including inadequate income and delinquency of his boy, age 12. He asks how he can get help with these difficulties. How would you advise him?
 3. Write a descriptive paragraph on any three (3) of the social services below, indicating:
 - (a) The circumstances in the community which brought it into existence - why was it created?
 - (b) How does it operate to render its services?
1. The Children's Aid Society.
 2. The Juvenile and Family Court.
 3. The Welfare Council of Toronto.
 4. The Canadian National Institute for the Blind.
 5. City of Toronto, Department of Public Welfare.



Accounting

UNIVERSITY OF TORONTO
FACULTY OF DENTISTRY

ANNUAL EXAMINATIONS, 1955

THIRD DENTAL YEAR—DENTAL NURSING

PRINCIPLES OF ACCOUNTING

Marks

- 25 1. What is the purpose of a Trial Balance in double entry?
2. Name at least three Accounts Payable which a dentist may have.
3. Explain the meaning of Capital.
4. List five asset accounts.
5. Briefly outline the purpose of keeping records.

6. With the information given below, prepare a Statement of Income and Expenditures for Dr. A. C. Robb.

Daily receipts for the month of December are as follows:

Dec. 1, \$ 53.00	Dec. 16, \$ 60.60
2, 90.50	18, 536.50
4, 64.25	19, 370.00
5, 129.30	20, 342.00
6, 400.00	21, 54.50
7, 35.50	22, 43.00
8, 342.10	23, 154.50
9, 15.00	24, 325.25
11, 424.00	25, 290.00
14, 435.50	28, 250.00
15, 20.50	29, 10.00
	30, 14.50

75 December 1, 1954 Bank Balance \$1,234. All monies received have been deposited daily.

December 3. Issued the following cheques.

Rent for December \$100.

Telephone account \$12.50.

Monthly payment of \$124 on equipment.

C.O.D. order from Eaton's \$12.50.

10. Toronto Laundry Service, towels and linen \$9.

15. Advanced payment by cheque to dental nurse, \$80.

31. Made the following payments by cheque.
Dental Equipment Company, for dental supplies \$135.
Dental Nurse's salary \$69.20 and to Receiver General of Canada for her income tax, \$10.30.
Ashley Dental Company \$24.50, dental supplies.
Crosley-Smith Lab. Costs \$385.50.
Petty Cash Expenses \$5.34.
Consumers' Gas Company \$3.50.
Hydro \$9.40.
Personal withdrawal \$300.

Dr. Robb estimates he has used \$154 worth of supplies and drugs.

Depreciation on equipment is \$70.

Prepare a supplementary ledger account for the payroll.

Unemployment insurance of 50 cents was paid out of petty cash.

UNIVERSITY OF TORONTO
FACULTY OF DENTISTRY

ANNUAL EXAMINATIONS, 1955

DENTAL NURSING

DENTAL MATERIALS AND TECHNOLOGY

1. Describe the manipulation of:
 - (a) Alginate for an orthodontic impression;
 - (b) Agar for a crown and bridge impression;
 - (c) A gypsum product of your choice as a "wash" in a complete denture impression.
2. List and account for the possible defects in:
 - (a) An acrylic appliance returned from a commercial laboratory;
 - (b) A gold casting made in your own office.
3. Compare the properties of the different dental cements.
4. Write brief notes on:
 - (a) Soldering gold wires;
 - (b) Polishing plastics and metals;
 - (c) Compound impressions;
 - (d) Self-curing acrylics.

UNIVERSITY OF TORONTO
FACULTY OF DENTISTRY

ANNUAL EXAMINATIONS, 1955

DENTAL NURSING

DENTAL RADIOGRAPHY

1. (a) Discuss the hazards of radiation under the following headings:

- (i) Safety limits
- (ii) Precautions to patient and operator
- (iii) Effects of overexposure.

(b) Name and define the three types of radiation which are involved in the production of x-rays. Which type is most harmful if used indiscriminately?

2. (a) What are the essential items for equipping a processing room?

(b) Assuming that a full mouth x-ray survey (two films in each packet) is ready for mounting, state your method of doing this correctly.

3. (a) What is meant by reduction and intensification of x-ray films? Is this possible to do in the average dental office? Can this be done in white light or must it be done in a "dark" room?

(b) What is the action of the developing solution on an exposed x-ray film? What is the action of the fixing solution?

4. State two causes each for the following faulty radiographs:

- (a) brittleness and curl
- (b) total blackness
- (c) black streaks
- (d) blisters
- (e) yellow stain
- (f) clear celluloid
- (g) fogged
- (h) very light
- (i) reticulation.

5. (a) What are the advantages of using a two film packet? the disadvantages?

(b) When is an occlusal plane film used? Is this developed in the same manner as a periapical film?

(c) Why do we use extra-oral films? How do they differ from intra-oral films?

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DENTAL NURSING

DENTAL SURGERY ASSISTANCE

1. What instruments would be required for the surgical preparation of the mouth for the insertion of an immediate upper denture.

2. Classify and state the uses of the following drugs in oral surgery:

- (a) Penicillin
- (b) Epinephrine
- (c) Gelfoam
- (d) Atropine
- (e) Demerol.

3. Write a brief description of the following terms:

- (a) Alveolectomy
- (b) Torus
- (c) Cyst
- (d) Root Resection.

4. Name four general anaesthetic agents and describe how they are administered.

5. (a) State briefly the correct method or methods of determining the temperature, pulse, and respiration.

(b) What is the significance of each?

(c) Within what limits might each be considered normal for the adult patient?

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DENTAL NURSING

JURISPRUDENCE AND ETHICS

Marks

- 25 1. Discuss the following as they apply to Dental Nursing:
 (a) Personal appearance
 (b) Telephone
 (c) Courtesy
 (d) Attentiveness.
- 25 2. Discuss Self Improvement under the following headings:
 (a) Inventory
 (b) Zeal
 (c) Opportunity
 (d) Dealing with failures.
- 25 3. Discuss four important ethical points for the Dental Nurse
 to observe.
- 25 4. Define Jurisprudence and enumerate the rules to be fol-
 lowed by the Nurse with respect to Jurisprudence.

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OPERATIVE DENTISTRY ASSISTANCE

Marks

- 20 1. Define and give one example of *each* of the following:
- (a) Antiseptics.
 - (b) Disinfectants.
 - (c) Caustics
 - (d) Stimulants.
 - (e) Counter-irritants.
- 20 2. Write brief notes on:
- (a) The care and sterilization of instruments in a dental office.
 - (b) Removing silver nitrate and iodine stains from linen.
 - (c) Methods of administration of drugs.
 - (d) The telephone technique in a dental office.
- 20 3. Discuss in detail how a nurse can assist in preparing the instruments and equipment for the following operations:
- (a) An oral examination.
 - (b) A setting of a gold inlay.
 - (c) A root canal filling.
 - (d) A silicate cement filling.
- 20 4. With the aid of diagrams describe briefly the following instruments: Bin-angle chisel, Spoon, Hoe, Reamer, Gingival margin trimmer.
- 20 5. What in your opinion are the desirable qualities to make a good dental nurse?

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DENTAL NURSING

ORAL HYGIENE AND PREVENTIVE DENTISTRY

1. List the factors that are considered important in the prevention and control of dental caries, and discuss one of them.
2. What are the clinical evidences of disturbances affecting:
 - (a) the stage of initiation during the growth of a tooth.
 - (b) the calcification of teeth.
3. Discuss:
 - (a) the role of the pancreas in the digestion of foods.
 - (b) endocrine function of the pancreas.
4. Discuss the vitamins under the following headings:
 - (a) function
 - (b) results of deficiency
 - (c) food sources.
5. List Canada's Food Rules and explain why each food group is present.

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